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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------------|------------------|
| 10/030,106 | 05/23/2002 | Martin Merck | MERC3001/JEK | 8205 |
| 23364 7590 12/18/2006 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314 | | | EXAMINER FIEGLE, RYAN PAUL | |
| | | | ART UNIT 2183 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 12/18/2006 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/030,106

Applicant(s)

MERCK, MARTIN

Examiner

Ryan P. Fiegler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-16 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-16 and 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 12-16 and 18-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Upon first encountering the instant application, the examiner believed that the operand memory stack referred to within the claims and specification was referring to a concrete operand structure, such as a register file. This would also explain how the application was classified under class 712.

Upon further consideration however, it appears that the operand memory stack referred to is merely an abstract data structure contained in memory. Data structures per se are non-statutory according to the interm guidelines.

For more information on the interm guidelines, visit

[http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.p
df](http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-16 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Storing Variable Length Data in a Circular Buffer", an IBM Technical Disclosure Bulletin, March 1993, herein referred to as IBM.

5. As per claims 12, 14, 19 and 21:

IBM teaches a data structure that contains variable length data contiguously packed together. The calculating machine is able to differentiate between the different data values by reading a fixed length field stored and associated with the packet, which discloses its length.

IBM does not teach the data structure being a stack, but rather a circular buffer. However, one of ordinary skill in the pertinent art at the time of the applicant's invention would have recognized that LIFO structure sometimes has certain advantages over a FIFO structure in some instances. In particular, an operand stack has the advantage of having the most recently generated values being immediately available. Based on temporal locality, these values will be the most likely to be used next. On the other hand, if the structure were a FIFO, that information would be inserted at the very end, and would not be accessible unless all other values were first extracted. Therefore, it would have been obvious to one of ordinary skill in the pertinent art to modify IBM's method to be a stack in the instance of manipulating operands.

IBM does not teach the length of a particular operand type is stored in a table in dependence on the corresponding coded type information. Rather, the length is explicitly put into the field. However, this provides the disadvantage that the actual data is limited to the size that is addressable by the fixed length field. If it was desirable for

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the data to be longer, it would have been obvious to one of ordinary skill in the pertinent art to designate that size with a "type" which is specified the fixed length field. The calculating machine would access a table to compare the contents of the fixed length field with different types, which specify a length.

Therefore, it would have been obvious to one of ordinary skill in the pertinent art at the time of the applicant's invention to store a length of a particular operand type in a table in dependence on the corresponding coded type information.

6. As per claim 13 and 20:

IBM does not teach the type field being a separate entity, but rather integrated in with the data. However, one of ordinary skill in the pertinent art would have recognized that this is simply a designer's choice. Both situations offer certain advantages and disadvantages. For instance, having the two separated has the advantage of separating the logic involved in deciphering the length of the data and the logic to read the data itself. This will make the overall logic simpler. However, separating the two makes it more likely that the memory accesses will be far apart, and therefore across different memory pages, making the accesses much longer.

7. As per claim 15:

IBM's data structure is virtual, since it is a contiguous extent of memory, meaning that the data structure can be placed anywhere in memory. There is no concrete logic associated with the data structure itself, merely how the processor accesses it.

8. As per claim 16 and 22:

IBM contains an operand type checking device which is activated at each read access to the operand memory stack. The length of the packet is taken from the location of the read pointer and then the specified number of bytes of packet data are copied to an output buffer or file by the processor.

9. As per claim 18:

Putting the operand stack on a smart card would at most make it portable, which has been found in *In re Lindberg* (194 F.2d 732, 735, 93 USPQ 23, 26 (CCPA 1952)) to not be a distinguishing patentable feature.

Response to Arguments

10. Applicant's arguments with respect to claims 12 and 19 have been considered but are moot in view of the new ground(s) of rejection.

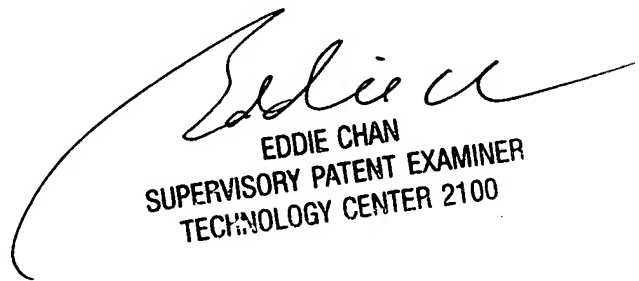
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan P. Fiegle whose telephone number is 571-272-5534. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on 571-272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ryan P Fiegle
Examiner
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